

*D1
Conclusion*
(e) a nucleic acid molecule encoding the polypeptide of SEQ ID NO:20, or a biologically active fragment thereof;

(f) a nucleic acid molecule that encodes a polypeptide that is at least 90 percent identical to the polypeptide of SEQ ID NO:14 as calculated using the computer algorithm FASTA with the default opening and gap penalties and the scoring matrix PAM 250;

(g) a nucleic acid molecule that encodes a polypeptide that is at least 90 percent identical to the polypeptide of SEQ ID NO:20 as calculated using the computer algorithm FASTA with the default opening and gap penalties and the scoring matrix PAM 250;

(h) a nucleic acid molecule that hybridizes under stringent conditions of 0.2 X SSC and 0.1 percent SDS at a temperature between 55-65°C to the complement of any of (a)-(g) above; and

(i) a nucleic acid molecule that is the complement of any of (a)-(g)] (h) above.

D2
5. (amended) [A] An isolated nucleic acid molecule selected from the group consisting of: nucleotides 1-1689 of SEQ ID NO:13, nucleotides 1-1920 of SEQ ID NO:13, nucleotides 1920-2820 of SEQ ID NO:13, nucleotides 2089-2820 of SEQ ID NO:13, and nucleotides 2089-2859 of SEQ ID NO:13.

6. (amended) [A] An isolated nucleic acid molecule encoding amino acids 640-940 of the polypeptide of SEQ ID NO:14.

D3
19. (twice amended) A process for producing a [telomerase protein 2] polypeptide comprising the steps of:

(a) expressing a polypeptide encoded by the nucleic acid molecule of claim 1 in a suitable host; and
(b) isolating the polypeptide.

D4
26. (twice amended) A method of increasing the proliferation rate of a cell, comprising expressing in the cell the nucleic acid of SEQ ID NO:13, or SEQ ID NO:19 or a fragment or variant thereof, wherein the variant encodes one or more conservative amino acid substitutions and optionally one or more amino acid deletions, and wherein the fragment or variant has telomerase catalytic activity.

Sub E1
Q4
Conclude

27. (twice amended) A method of increasing telomerase activity in a cell, comprising expressing in the cell the nucleic acid of SEQ ID NO:13 or SEQ ID NO:19 [a telomerase protein 2 nucleic acid molecule], or a fragment or variant thereof, wherein the variant encodes one or more conservative amino acid substitutions and optionally one or more amino acid deletions, and wherein the fragment or variant has telomerase catalytic activity.

28. (twice amended) A method of decreasing telomerase activity in a cell, comprising expressing a [telomerase protein 2] variant nucleic acid molecule of SEQ ID NO:13 or SEQ ID NO:19 in a cell, wherein the variant does not have telomerase protein 2 catalytic activity.

29. (twice amended) [A] An isolated nucleic acid molecule encoding a variant [telomerase protein 2] polypeptide, wherein the codon for aspartic acid at amino acid position 868 or 869 of SEQ ID NO:19 is changed to a codon for alanine.

30. (twice amended) [A] An isolated nucleic acid molecule encoding a variant [telomerase protein 2] polypeptide, wherein the codons for aspartic acid at amino acid positions 868 and 869 of SEQ ID NO:19 are changed to codons for alanine.

Q5
33. (amended) A transformed or transfected host cell expressing [telomerase protein 2 having telomerase catalytic activity] a nucleic acid molecule comprising the sequence of SEQ ID NO:13 or SEQ ID NO:19.

Q6
34. (newly added) A method of increasing the proliferation rate of a cell, comprising expressing in the cell the nucleic acid molecule of SEQ ID NO:13 or SEQ ID NO:19 or a fragment or variant thereof, wherein the variant encodes one or more amino acid deletions, and optionally one or more conservative amino acid substitutions, and wherein the fragment or variant has telomerase catalytic activity.

35. (newly added) A method of increasing telomerase activity in a cell, comprising expressing in the cell the nucleic acid molecule of SEQ ID NO:13 or SEQ ID NO:19 or a fragment or